

## ABSTRACT

A laser weld monitoring system capable of assessing a weld quality of welding using a pulsed laser is provided. The system includes at least one sensor capable of capturing a weld characteristic of welding using said pulsed laser. The weld characteristic has multiple attributes. The system also includes data acquisition and processing equipment adapted for storing and analyzing the weld characteristic. A user first performs multiple welds to capture at least one weld characteristic for each weld. The user then determines the weld quality of each weld, and runs at least one of a library of algorithms associated with the attributes on said at least one weld characteristic for each weld to generate a single value output for the associated attribute. The user selects an attribute indicative of the weld quality by correlating the single value outputs of said at least one algorithm with the weld qualities of the welds.

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SD PAS527450.1-\*--09/29/03 11:22 AM